

**CLEAN VERSION OF THE ENTIRE SET OF CLAIMS**

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*SAC PBY*

1        1. (Amended) An apparatus comprising:  
2              a cache management logistics to control a transfer of a trace;  
3              a first cache coupled to the cache management logistics to evict the trace based on a  
4              replacement mechanism; and  
5              a second cache coupled to the cache management logistics to receive the evicted trace  
6              based on a first number of accesses to the trace.

1        2. The apparatus of claim 1 wherein the trace has a usage counter, the usage counter  
2              being used to count the number of accesses to the trace.

1        3. (Amended) The apparatus of claim 2 further comprising a comparator to compare  
2              a first threshold value to the number of accesses to the trace, the first threshold value being a first  
3              fixed number or a first dynamically adjusted number.

1        4. The apparatus of claim 3 wherein the trace is transferred from the first cache to  
2              the second cache when the first threshold value is less than the number of accesses to the trace.

1        5. The apparatus of claim 3 wherein the trace is discarded from the first cache when  
2              the first threshold value is more than or equal to the number of accesses to the trace.

1        6. The apparatus of claim 4 further comprising a level 2 (L2) cache to receive the  
2              trace, the trace being transferred to the first or second cache for execution.

1        7. The apparatus of claim 6 wherein trace is transferred from the second cache to the  
2              L2 cache when a second threshold value is less than a second number of accesses to the trace, the  
3              second threshold value being fixed or dynamically adjusted.

1        8. (Amended) The apparatus of claim 4 wherein the trace is discarded from the  
2              second cache when a second threshold value is more than a second number of accesses to the  
3              trace, the second threshold value being a fixed number or a dynamically adjusted number.

1           9.       The apparatus of claim 8 wherein the second number of accesses to the trace is a  
2 number of accesses to the trace counting from a time the trace first enters the first cache.

1           10.      The apparatus of claim 1 wherein the replacement mechanism is a Least Recently  
2 Used (LRU) mechanism.

1           11.     (Amended) A method comprising:  
2           controlling a transfer of a trace;  
3           evicting the trace based on a replacement mechanism using a first cache; and  
4           receiving the evicted trace based on a first number of accesses to the trace using a second  
5 cache.

1           12.     The method of claim 11 further comprising counting the first number of accesses  
2 to the trace.

1           13.     (Amended) The method of claim 12 further comprising comparing a first  
2 threshold value to the number of accesses to the trace, the first threshold value being a first fixed  
3 number or a first dynamically adjusted number.

1           14.     The method of claim 13 further comprising transferring the trace from the first  
2 cache to the second cache when the first threshold value is less than the number of accesses to  
3 the trace.

1           15.     The method of claim 13 further comprising discarding the trace from the first  
2 cache when the first threshold value is more than or equal to the number of accesses to the trace.

1           16.     The method of claim 14 further comprising receiving the trace by the second level  
2 (L2) cache, the trace being transferred to the first or second cache for execution.

1           17.     The method of claim 16 further comprising transferring the trace to the L2 cache  
2 when a second threshold value is less than a second number of accesses to the trace, the second  
3 threshold value being fixed or dynamically adjusted.

1        18. (Amended) The method of claim 14 further comprising discarding the trace when  
2 a second threshold value is more than a second number of accesses to the trace, the second  
3 threshold value being a fixed number or a dynamically adjusted number.

1        19. The method of claim 18 wherein the second number of accesses to the trace is a  
2 number of accesses to the trace counting from a time the trace first enters the first cache.

1        20. The method of claim 11 wherein the replacement mechanism is a Least Recently  
2 Used (LRU) mechanism.

1        21. (Amended) A system comprising:  
2              an execution unit; and  
3              a cache unit couple to the execution unit to provide the execution unit a trace, the cache  
4 unit comprising:  
5              a cache management logistics to control a transfer of the trace;  
6              a first cache coupled to the cache management logistics to evict the evicted trace based  
7 on a replacement mechanism; and  
8              a second cache coupled to the cache management logistics to receive the trace based on a  
9 first number of accesses to the trace.

1        22. The system of claim 21 wherein the trace has a usage counter, the usage counter  
2 being used to count the number of accesses to the trace.

1        23. (Amended) The system of claim 22 further comprising a comparator to compare  
2 a first threshold value to the number of accesses to the trace, the first threshold value being a first  
3 fixed number or a first dynamically adjusted number.

1        24. The system of claim 23 wherein the trace is transferred from the first cache to the  
2 second cache when the first threshold value is less than the number of accesses to the trace.

1        25. The system of claim 23 wherein the trace is discarded from the first cache when  
2 the first threshold value is more than or equal to the number of accesses to the trace.

1        26. The system of claim 24 further comprising a level 2 (L2) cache to receive the  
2 trace, the trace being transferred to the first or second cache for execution.

1        27. The system of claim 26 wherein trace is transferred from the second cache to the  
2 L2 cache when a second threshold value is less than a second number of accesses to the trace, the  
3 second threshold value being fixed or dynamically adjusted.

1        28. (Amended) The system of claim 24 wherein the trace is discarded from the  
2 second cache when a second threshold value is more than a second number of accesses to the  
3 trace, the second threshold value being a fixed number or a dynamically adjusted number.

1        29. The system of claim 28 wherein the second number of accesses to the trace is a  
2 number of accesses to the trace counting from a time the trace first enters the first cache.

1        30. The system of claim 21 wherein the replacement mechanism is a Least Recently  
2 Used (LRU) mechanism.

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